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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,636	01/23/2001	Alan K. Gorenstein	38188-382	8377

7590 05/05/2004	EXAMINER
MCDERMOTT, WILL & EMERY	LE, KHANH H

ART UNIT	PAPER NUMBER
3622	

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DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
Office Action Summary	09/766,636	GORENSTEIN, ALAN K.	
	Examiner	Art Unit	
	Khanh H. Le	3622	μ ω

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *1-21* is/are allowed.

6)☒ Claim(s) *22-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Reply to Amendment received 02/23/2004

1.   This Office Action is responsive to Applicant's Correspondence received 02/23/2004 (Extension of Time, Amendment, papers 25-26).

Claims 1-32 are now pending and considered.   Claims 1, 5, 16, 18, 22 are independent.

Allowance and Reasons for allowance

2.   **Claims 1-21 are allowed. The previous rejections under 35 USC 101, 102 and 103 of claims 1-21 are hereby withdrawn due to the claim amendments.**

3.   The following is an examiner's statement of reasons for allowance:

The following combination of steps distinguish the invention from the prior art:

Claim 1.   (Currently Amended) A method for segmenting members of a population of members, comprising the steps of:

using a computer **to predict a plurality of targeted events** associated with each population member by using a plurality of segmentation strategies, **each targeted event being independently predicted from other targeted events of the plurality of targeted events by a respective segmentation strategy** of the plurality of segmentation strategies, and

generating a score associated with each prediction;

generating a first composite score for each population member by combining each of the scores for that population member, and

segmenting the population according to the generated first composite scores.

4.   **The closest US patent prior art reference is:**

Lazarus et al., US 6,430,539 B1, discloses predictive modeling of consumer financial behavior but does not discloses the invention as claimed above.

5.   The closest foreign patent prior art is:

WO 01/06405 discloses scoring per population member based on several models but does not discloses combining the scores across models as claimed.

6.   The closest non-patent prior art is:

Bayesian Model Averaging: A Tutorial (with discussion) (306k bytes) Corrected version of the Statistical Science, Vol. 14, No.4, pp. 382-417 article by
Jennifer A. Hoeting, David Madigan, Adrian E. Raftery and Chris T. Volinsky, November 1999, downloaded Jul 22, 2002 from www.stat.washington.edu/www/research/online/hoeting1999, hereinafter Hoeting .

(Applicants have challenged the publication date of this downloaded article. A copy of the front of this article, showing a 1999 date of publication date and a copy of the content of Statistical Science, vol 14, No.4, Publication date: November 1999, showing Hoeting as part of the volume are herein included to establish the article's date).

Hoeting, at pages 393-394, especially p. 394 col 1 first 2 full paragraphs, steps 1' and 2' (see last office Action) , discloses
using a computer to predict **one** **targeted event (risk)** associated with each population member by using a plurality of segmentation strategies, and
generating a score associated with each prediction;
generating a first composite score for each population member by combining each of the scores for that population member, and
segmenting the population according to the generated first composite scores (step 4) .

However HOETING does not disclose predicting a **plurality of targeted events** associated with each population member **by using a plurality of segmentation strategies, each targeted event being independently predicted from other targeted events of the plurality of targeted events by a respective segmentation strategy of the plurality of segmentation strategies**, associated with the other steps as recited in claim 1. There seems to be no motivation or suggestion that the particular application of Bayesian Model Averaging described by HOETING at p. 394 at column 1 first 2 full paragraphs can be extended to prediction of other targeted events as claimed in claim 1.

Claims 2-4, dependent on claim 1, are allowed for the same reasons.

Independent claim 5 parallels claim 1, with the addition of ranking the members. and thus allowed for the same reasons.

Claims 6-15, dependent on claim 5, are allowed for the same reasons.

Claim 16 is a combination of claims 5, 11, and 12, and thus is allowed for the same reasons.

Claim 17, dependent on claim 16, is allowed for the same reasons.

Claim 18-21 parallel claims 1-4 in computer readable medium format and are rejected on the same basis.

Allowable Subject Matter

7.   **Claims 29, 30, 32 would be allowable if the rejections under 35 USC 101 could be corrected as suggested below.**   There are no suggestion to combine Hoeting to any other prior art to arrive at the method according to claim 22, wherein the first and second segmentation strategies differ in terms of target, purpose or wherein the first and second scores are combined through regression.

Official Notices

8.   All Official Noticed facts taken in the previous Office Actions and not seasonably challenged remain taken as admitted. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). See MPEP 2144.03.

Claim Rejections - 35 USC § 102

9.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10.   **Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Bayesian Model Averaging: A Tutorial (with discussion) (306k bytes) Corrected version of the Statistical Science vol. 14:4, pp. 382-417 article. Jennifer A. Hoeting, David Madigan, Adrian E. Raftery and Chris T. Volinsky, November 1999, downloaded Jul 22, 2002 from www.stat.washington.edu/www/research/online/hoeting1999, hereinafter Hoeting.**

As to claim 22. (Currently Amended)

Hoeting discloses

A method for segmenting members of a population of members, comprising the steps of (Hoeting , p. 394 col 1 first 2 full paragraphs, especially step 1'):

running a first segmentation strategy against a population (e.g. M1) to generate a first score for each population member (see step 2') , said first score (see step 2', score per person per model) indicating variance among the population (the risk score/person/model is used to segment the population, per model, therefore is interpreted as indicating variance among the population) ;

running a second segmentation strategy, different than said first segmentation strategy (Hoeting , p. 394 col 1 first 2 full paragraphs, especially step 1', e.g. model M2,.... Mk) , against the population to generate a second score for each population member, said second score indicating variance among the population (same analysis as for model M1 above), wherein said first score provides an indicator of variance independent of the indicator of variance provided by said second score (inherent because the 2 models used in Hoeting are different) ;

generating a first composite score for each population member by combining the respective first score and the respective second score (Hoeting , p. 394 col 1 first 2 full paragraphs, especially step 2'); and

segmenting the population according to the generated first composite scores (see Hoeting , p. 394, table 5, under "BMA" division into 3 risk groups ; also, see col 1 first 2 full paragraphs, steps 1', 2', 3 and 4).

Claims rejections. 35 U.S.C. 103

11.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12.   Claims 23-28, 31 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Hoeting.

Claim 23.   (Currently Amended)

Hoeting discloses running several segmentation strategies, calculating scores per population member and per strategy and summing such scores per population member however does not specifically disclose repeating the same with a third strategy. However, it is obvious under Hoeting s' summation of k=1 to …K that K could be a 3 for a third segmentation strategy (see Hoeting, p. 385: up to 100 models can be used) .

Combining the respective third score for each population member with the respective first and second scores when generating the first composite score would have been obvious under the Hoeting method disclosed at p. 394, if the particular test calls for three segmentation models to be run, as suggested at Hoeting p. 385.

As to claim 25 (Previously Presented),

 Hoeting discloses

The method according to claim 22, wherein the step of combining includes averaging the respective first and second scores for each population member by adding the respective first score and the respective second score and dividing the resulting sum by two and wherein either or both the first and second score are weighted by a respective factor unequal to one, prior to adding (Hoeting , p. 394 col 1 first 2 full paragraphs, especially step 2') .

As to claim 24,

Claim 24 is obtained when Hoeting 's weighting coefficients , as discussed above in claim 25, equal 1, (Official Notice is taken that averaging is a well-known and simple method of combining more than one quantity) and two models are involved (Hoeting at page 385, discloses one to two models). It would have been obvious to one skilled in the art at the time the invention was made to use averaging of model scores in the Hoeting method disclosed at p. 394 step 2' to take advantage of this simple combining method, when two models scores are involved as disclosed by Hoeting at page 385.

As to claim 26. (Previously Presented)

Hoeting implicitly discloses The method according to claim 22, wherein the step of generating a first composite score is accomplished using a general purpose computer executing a commercially available statistical software package because of the large computations involved. (see at least p. 403: "...implementing BMA in high-dimensional problems"...)

As to claim 27.(Previously Presented)

The method according to claim 22, further comprising

the steps of:

generating a respective first ranking for each population member based on the first

score;

generating a respective second ranking for each population member based on the second score;

generating a different composite score for each population member by combining the respective first and second rankings; and

segmenting the population according to the generated different composite scores.

This claim parallels claim 22, disclosed as above, with the addition of ranking the members. Ranking is a well-known method that can be substituted for scoring (see e.g. ranking which is disclosed in the Equifax article, mentioned in last Office Action).

One skilled in the arts thus would find it obvious to rank members for segmentation instead of just scoring as ranking permits better (continuous) segmentation, whenever called for by the segmentation goals, as is well-known in the arts.

As to claim 28.(Previously Presented)

The method according to claim 23, further comprising the steps of:

generating a respective first ranking for each population member based on the first

score;

generating a respective second ranking for each population member based on the second score;

generating a respective third ranking for each population member based on the third

score;

generating a different composite score for each population member by combining the respective

first, second and third rankings; and

segmenting the population according to the generated different composite scores.

This claim is a combination of claims 23 and 28 and is rejected on the same basis.

As to claim 31.(Previously Presented) Hoeting discloses

the method according to claim 22, wherein the first and second segmentation strategies differ in

terms of mathematical method.

(see at least Hoeting p. 397 col. 2 1st full paragraph., "over models with different link

functions...")

Claim Rejections - 35 USC § 101

13. The text of those sections of Title 35, U.S. Code not included in this action can be

found in a prior Office action.

14.   **Claims 22-25, 27-32 are rejected under this section as claimed inventions**

directed to non-statutory subject matter.

Claim 22 and all its dependents (except claim 26) claim inventions that do not fall within the technological arts because the disclosed and claimed inventions are not tied to any technological art or environment.

All the method steps of independent claims and their dependents can be performed manually without interaction of a physical structure or machine.

Because the independently claimed inventions do not fall within the technological arts and are directed to abstract and intangible ideas which does not produce a useful, concrete and tangible result, those claims and claims depending from them, are not permitted under 35 USC 101 as being related to non-statutory subject matter. However in order to consider those claims in light of the prior art, examiner will assume that those claims recited statutorily permitted subject matter.

In order to overcome this rejection it is suggested that Applicants amend the claims, at the very least, to include "using a computer " in the body of the claims, in at least one method step.

Claim Rejections - 35 USC § 112 (first paragraph)

15.   As to claims 22-32: withdrawn.

Conclusion

16.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
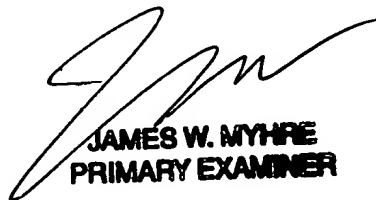
18.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh H. Le whose telephone number is 703-305-0571. The Examiner works a part-time schedule and can best be reached on Tuesday-Wednesday 9:00-6:00. The examiner can also be reached at the e-mail address: khanh.le2@uspto.gov. (However, Applicants are cautioned that confidentiality of email communications cannot be assured.)

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eric Stamber can be reached on 703-305-8469. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

April 30, 2004
KHL

JAMES W. MYHRE
PRIMARY EXAMINER